

ABSTRACT OF THE DISCLOSURE

Disclosed are methods of forming dielectric materials using atomic layer deposition (ALD) and methods of forming dielectric layers from such materials on a semiconductor device. The ALD process utilizes a first reactant containing at least one alkoxide group that is chemisorbed onto a surface of a substrate and then reacted with an activated oxidant that contains no hydroxyl group to form a dielectric material exhibiting excellent step coverage and improved leakage current characteristics.